

**Appts. for biological elimination of phosphorus and nitrogen from waste water - includes storage, 1st denitrification, phosphorus liberation, 2nd two-part denitrification, nitrification, aeration and post clarification tanks**

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**Abstract**

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In an appts. for biological elimination of P and N from waste water, using non-oxidising, anaerobic and aerobic stages, (a) the plant comprises removal of coarse matter, a storage tank, a 1st denitrification tank, a tank for liberation of P, a 2nd 2-part denitrification tank, a nitrification tank, an intermediate aeration tank and a post-clarification tank, (b) waste water is fed from coarse matter, into storage, 1st denitrification and P liberation tanks and the 2nd part of 2-part denitrification, (c) storage tank is connected with 1st denitrification and post clarification, (d) the 1st part of 2-part denitrification tank is coupled, thorough aeration tank, with post clarification tank and the 2nd part of nitrification tank, (e) the 2nd part of tank 2-part denitrification is connected with denitrification and nitrification tanks, (f) there are stirrers (10) in P liberation, denitrification, 2-part denitrification and storage tanks, (g) there is an aerator (12) in nitrification tank, (h) 1st denitrification, P liberation and nitrification contain floating, granular carrier material for microorganisms, (i) there is a wall (11) between nitrification and P liberation tanks, arranged so floating culture supports can be introduced from below into P liberation tank and withdrawn again from above, and (j) the sludge pre-concentrator (9) is connected with nitrification and post clarification tanks. ADVANTAGE - Waste water contg. excess of P and N can be treated, in a process which is stable throughout the year. Addn. of precipitants is avoided. The reactor vol. can be reduced by 20-30%.

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